

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property  
Organization  
International Bureau



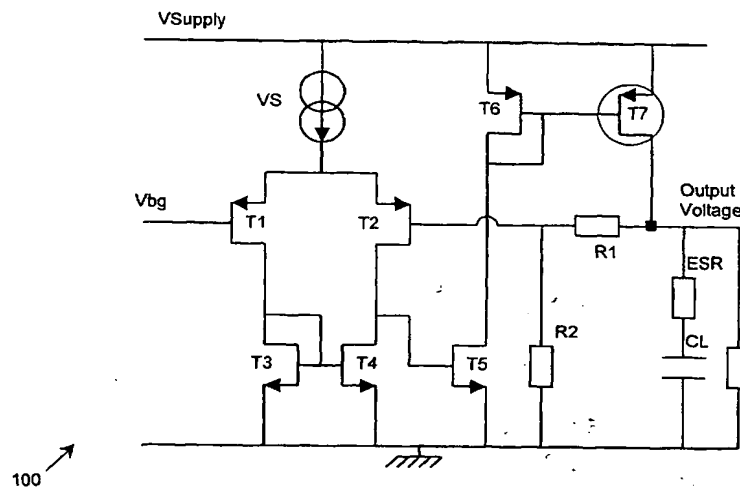
(43) International Publication Date  
8 January 2004 (08.01.2004)

PCT

(10) International Publication Number  
**WO 2004/003674 A1**

- (51) International Patent Classification<sup>7</sup>: **G05F 1/575**, 1/565
- (21) International Application Number: PCT/EP2003/006295
- (22) International Filing Date: 16 June 2003 (16.06.2003)
- (25) Filing Language: English
- (26) Publication Language: English
- (30) Priority Data: 02291605.0 28 June 2002 (28.06.2002) EP
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- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).
- Published:**  
— with international search report
- For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: **LOW DROP-OUT VOLTAGE REGULATOR AND METHOD**



(57) Abstract: A low drop-out voltage regulator (300) and method comprising: a differential transistor arrangement (Q1-Q2) for receiving a reference voltage and in dependence thereon producing a regulated output voltage; an output stage (Q3) for coupling to a load; and a control loop (310) coupled to the differential transistor arrangement for providing a dominant pole. Since a load capacitance is not used for dominant pole, stability of operation may be obtained with a lower load capacitance. The output stage is preferably a closed-loop unity gain amplifier providing a low impedance output. This provides the following advantages: 1 - The output capacitor can be dramatically reduced or removed (a low dominant pole, allows the regulator to work with 0nF output capacitor). 2 - internal power consumption can be reduced, improving regulator efficiency. 3 - Low output impedance is provided, with very low DC output resistance. 4 - The load capacitor can have zero ESR (equivalent serial resistance).

## INTERNATIONAL SEARCH REPORT

Internat Application No  
PCT/ 3/06295A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 G05F1/575 G05F1/565

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 G05F

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6 225 857 B1 (BROKAW) 1 May 2001 (2001-05-01)	1-4, 9, 10, 12-15, 18-23
A	the whole document	5-8, 11, 16, 17
X	US 6 388 433 B2 (MARTY NICOLAS) 14 May 2002 (2002-05-14)	1, 12
A	the whole document	2-11, 13-23
X	US 6 304 131 B1 (RINCON-MORA GABRIEL ALFONSO ET AL) 16 October 2001 (2001-10-16)	1, 12
A	the whole document	2-11, 13-23
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Date of the actual completion of the international search

16 October 2003

Date of mailing of the international search report

23/10/2003

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International Application No

PCT/JP 03/06295

## C.(Continuation) DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
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A	the whole document	2-11, 13-23
A	---- US 5 889 393 A (WRATHALL ROBERT S) 30 March 1999 (1999-03-30) abstract	1-23
A	--- US 5 982 226 A (RINCON-MORA GABRIEL A) 9 November 1999 (1999-11-09) abstract	1-23
A	--- US 6 340 918 B2 (TAYLOR CRAIG) 22 January 2002 (2002-01-22) abstract -----	1-23

# INTERNATIONAL SEARCH REPORT

Information on patent family members

International

Application No

PO

03/06295

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